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THE PREDICTION OF OUTCOMES OF MDTA PROGRAMS, A PILOT STUDY.

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AN EXTENSION OF KNOWLEDGE OF THE FACTORS RELATED TO TRAINEE DROPOUTS IN MANPOWER DEVELOPMENT AND TRAINING ACT (MDTA) PROGRAMS WAS ATTEMPTED. THE FACTORS RELATED TO SUCCESS OF MDTA PROGRAMS WERE COMPUTED FOR ORGANIZATIONAL AND PROCEDURAL CHARACTERISTICS OF THE TRAINEES. BOTH RETENTION AND PLACEMENT SHOW SIGNIFICANT CORRELATION WITH CHARACTERISTICS OF THE PROGRAM ORGANIZATION AND PROGRAM MANAGEMENT, ENOUGH SO THAT EFFORTS TO IMPROVE THE STANDING OF AN MDTA PROGRAM, EITHER AS TO ITS RETENTION OR ITS PLACEMENT, SHOULD BE FRUITFUL. THE REAL PROBLEM IS THAT OF MAKING THE PROGRAMS FIT THE TRAINEES RATHER THAN TRYING TO SELECT TRAINEES TO FIT THE TRAINING PROGRAMS. THE NEXT STEP IS TO STUDY MORE INTENSELY THE EFFECTS OF PROGRAM ORGANIZATION, AND ADMINISTRATIVE AND INSTRUCTIONAL PRACTICES ON BOTH RETENTION AND PLACEMENT. (GD)

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THE PREDICTION OF OUTCOMES OF MDTA PROGRAMS

A Pilot Study

COMPLETED UNDER

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With The

U.S. OFFICE of EDUCATION

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THE PREDICTION OF OUTCOMES OF MDTA PROGRAMS

A SUMMARY

In a pilot study of the factors related to success of MDTA programs correlations were computed for organizational and procedural characteristics of MDTA programs and characteristics of the trainees with each of two measures of program success, the per cent of trainees who completed the course (Retention) and the per cent of trainees completing the course who were employed in the field of their training (Placement).

Both Retention and Placement show correlation with characteristics of program organization and program management, enough so that efforts to improve the standing of an MDTA program either as to its Retention or its Placement should be fruitful.

If trainees are selected to show a high Retention rate, those selected would have education at the 12th grade level or higher, not be receiving public assistance, have marketable skills and have had employment within the three months preceding the training program. These are not the people for whom the MDTA programs were primarily designed. The programs were designed to train those with inadequate education, who are on public assistance, who lack marketable skills, and have a record of unemployment.

With only one exception, the same statement can be made relative to selection of trainees for maximum per cent Placement.

While there is no difficulty in understanding why the selected factors do correlate with Retention and with Placement rates, the real problem is that of making the programs fit the trainees rather than trying to select trainees to fit the training.

If one wants to improve Retention or raise the per cent who are placed in jobs, it is necessary to review the data relating to program organization and program management. While many items of these data do show significant correlation with either Retention or Placement, the study does not demonstrate that these are causes. It should be noted that the data of this

study are consistent with the judgments and experiences of many educators. If one wants to improve the Retention or to minimize dropouts in an MDTA program, the "significant variables" indicate that certain actions might well be taken. Those steps, showing the highest relationship to Retention, appear first and those with less, but still significant relationship, follow:

- reduce absenteeism. There is no one way to improve attendance; recognitions for good attendance, a program of home calls on those absent 3 or more consecutive days, and emphasis on the need for regular attendance for effective training.
- keep the number of trainees per instructor low. MDTA trainees need the benefit of individualized instruction and recognition of their individual achievements.
- *promote a sensible counseling program for the trainees, especially taking advantage of the instructor in his classroom relationship to the trainees. Making counseling seem artificial is almost as ineffective as no counseling.
- *take steps before the program starts to insure that the neighbors of the training program do not object to its presence. This is an important initial step.
- *programs in which discipline is not a major problem and rarely comes to the director's attention have better Retention than those in which discipline requires careful watching. As much as possible, discipline should be handled by prevention.

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* Those program characteristics showing significant relationship to both Retention and Placement are starred.

- measurement of trainee progress should be done carefully and not by expedients, such as use of standardized tests or by instructors' overall judgments.

- *see that the training is really adjusted to the level and energies of the trainees. In MDTA programs, the training must fit the trainee, rather than the converse.

- the course organization and content should be preplanned for the program, not leaving that important task to the instructor who is not equipped for it.

- take care to see that the trainees' financial allowances are adequate.

- while the IQ level of trainees is negatively related to Retention, lack of any such estimate of learning ability suggests lack of realism in program planning and execution.

On the same basis, Placement of "graduates" might be enhanced by the following steps:

- make use of aptitude tests to aid in assignment and as an aid in performance evaluation. Having pertinent information about the talents of trainees enables the director and his staff to make the training more effective.

- *take care to see that the difficulty level and amount of work undertaken are appropriate to the trainees. Be sure that the time demands on trainees are reasonable. Training must fit the trainees as they are. Whenever the training fails to be adjusted to the trainees, the trainees begin to feel that it is the same old story, being up against an educational task that promises only failure.

. *programs in which discipline is a serious problem have a poorer Placement record than do other programs. As far as possible disciplinary problems need to be prevented and not permitted to raise their ugly heads.

. adequate supplies and good equipment maintenance is related to Placement. This is another facet of good planning and good management.

. *insure that the neighbors accept the presence of the program in the area.

. have an overall record of progress of trainees available to aid in placement.

. keeping in contact with local industries is a time honored way of promoting placement, and not leave this responsibility solely to the Employment Service or to chance.

. *counseling should be an integral part of the instructional program. It appears to be most effective for Placement and for Retention when done by the instructor as part of his instructional program.

. evaluation of the instructors performance should not be left to chance or done perfunctorily or by hearsay.

. select instructors who have had experience as workers in the subject they are teaching. Apparently some of the realism from their experiences is related to improved Placement.

These are simple, sound, common sense, educational principles borne out by the statistical evidences. The important - even startling - thing is the ease with which they may be overlooked.

THE PROBLEM

The success of training programs, such as those organized under the Manpower Development and Training Act (MDTA), may be expressed in terms of what happens to the trainees who have entered such training. Two meanings of "success" which are realistic and of concern are:

1. What proportion of the entrants complete the course?

2. What proportion of the "graduates" is placed in appropriate jobs?

While many other measures of success can be identified, such as improved attitude of trainees, cooperation of local industry, etc., the real payoff of MDTA training is the extent to which trainees complete the training program and get jobs for which their training fitted them. As the successes and failures of the program are examined, the major bases for non-success by either criteria can be more readily identified. As an increasing number of training programs are reported upon, various causes of dropping out or placement failures have been tentatively identified, but an objective statistical evaluation of the various programs, based on the data available, has not been made. This Report is an evaluation of the varying degrees of success the programs have experienced and provides some insights as to the reasons.

One of the simpler and more direct methods of examining these criteria is to attempt to predict, statistically, the retention or dropout rate and the job placement rate of MDTA programs, using as the predictors identifiable characteristics of the training programs and of their participants.

It is assumed that any program characteristics which contribute to the prediction of either the retention rate or the placement rate of graduates of the program itself, must also be associated, either directly or indirectly, with the program's success. Analysis of program data for a substantial number of recently completed programs should produce

measures of relative strengths of characteristics of programs in producing trainee Retention and Placement data. The analysis may also be expected to identify program characteristics which can be modified with corresponding improvement in the outcome of the training program.

If it is possible to predict either the per cent of trainees who complete the program, or the per cent of trainees who do get jobs in the occupation for which they were trained, by using the characteristics of the program and the characteristics of the trainee group, it may be possible to improve Retention and Placement in similar programs. Whenever the characteristics of the program or of the trainees may be changed by the action of the program director, such characteristics may operate to change the Retention or the Placement rates of the altered program. If so, the gains in trainee satisfaction, improvement in training effectiveness and amount of training per dollar can be considerable.

There have been a number of studies which give the reasons for leaving school as seen and reported by either the dropouts themselves, or by program observers. Such studies undoubtedly have some validity, but generalizations based on such data for MDTA programs may be misleading. Almost all of tnese studies have been made on public school dropouts and not on such new training programs as MDTA. For such programs as MDTA, the available studies of school dropouts seem to have little to offer because of the differences in age, purpose, operation, experience, or individual motivation.

The present study should extend our knowledge of the factors related to trainee dropouts in these type programs, making use of well-established methods that heretofore have seldom been applied to this kind of problem.

CRITERIA

In studying the success of MDTA programs, the key question is, "How Do You Judge or Measure Its Success?" While success of the MDTA programs may be expressed in the numbers of persons trained, the numbers trained who are subsequently employed and who had inadequate educational background and poor employment records, the cost per instructional day, etc., two useful measures were available through the follow-up data collected by the Office of Manpower and Training (OMAT) as follow-up of MDTA programs:

1. The per cent of enrollees who completed the course. This is the Retention criterion.

2. The per cent of those completing the course who obtained a job for which the course trained --- the Placement criterion.

It is doubtful that other criteria as simple and as valid could be devised. Both reflect important evidences of program effectiveness. Both measures were available for each of the 312 MDTA program sections included in the sample.

THE SAMPLE

Since MDTA is growing and changing, data for this study needed to be drawn from as recent programs as possible and also from as narrow a time span as possible. To make the sample sufficiently homogeneous the following limitations were adopted:

1. Use only MDTA programs approved during fiscal year 1964. At the time this study was initiated these were the most recent programs for which the Office of Manpower and Training (OMAT) had follow-up data.

2. Include only MDTA programs for which the Office of Manpower and Training had follow-up data.

3. Include institutional programs, but not "on-the-job."

4. Exclude refresher training programs.

Since the scope of the study did not permit the inclusion of all MDTA programs meeting the above limitations, the sample was further restricted to programs in selected metropolitan areas. In order to facilitate communications with program directors and the handling of the data, geographic concentration was advisable.

The programs finally selected were in the following metropolitan areas: Boston, Chicago, Detroit, Los Angeles, New York City, and San Francisco. These areas contained the largest numbers of programs which met the above restrictions. For these areas OMAT had received complete follow-up data for 312 sections of the programs.

Questionnaires were mailed to the directors of the MDTA programs encompassing the 312 sections. One follow-up letter was mailed six weeks after the original mailing. Considering the fact that the questionnaires were addressed by title and not by name, the response (for 222 sections, 71%) by survey standards is unusually high. The basic analysis for this study is based on the data related to these 222 sections.

DATA COLLECTION

Data for the study came from two sources: from the follow-up data for each MDTA program obtained and organized by OMAT, and by a questionnaire answered by program directors:

> Follow-up data which had been reported to OMAT by the program directors was made available by the Division of Statistical Studies and Systems, Office of Manpower Evaluation. In addition to the criterion data, per cent Retention and per cent Placement, the data were descriptive of the training group in each section of the programs. These variables obtained for this section are those listed in Table 2 as the predictor variables.

CODING OF DATA

Two codes were developed for recording the data on IBM cards. Plans for statistical treatment required that all data be in a form which would permit correlation with each of the criteria as well as with each of the other characteristics; hence, each coded item of information had to be expressed as a variable or as a dichotomy.

All of the data provided by the Statistical Studies and Systems Division, except the number of trainees in a section, were recorded as per cents. The following coding system was used so as to limit each variable to a one-digit code:

Per Cent	Code
100	9
90-99	8
80-89	7
70-79	6
50-69	5
30-49	4
20-29	3
10-19	2
1-9	1
0	0
No Data	X

The number of trainees in a section was recorded as a two-digit number, using 99 to indicate 99 or more.

A questionnaire to be filled out by program directors was developed and used to obtain further information about the trainees and the programs, and is shown in Appendix I. To develop this form, the investigators made a list of all of the information which they thought might have any relation to either of the two criteria. This list was shortened by eliminating the items of information already available from the OMAT records, by dropping those items of information which one would not likely find available and those questions which would require the director to take considerable effort to answer. The final form of the questionnaire contained 22 questions and was printed on the two sides

of a single sheet of paper. The efforts to avoid duplication of available data, and to include the questions which were readily answerable should have been helpful in gaining a higher response to the request for questionnaire information.

The coding scheme for the questionnaire data is shown as Appendix 2. Before constructing the code, frequency distributions of responses for each question were made for the 71 questionnaires which had been received. On the basis of these data and the need to use correlations as the major statistical procedure, many of the responses were dichotomized.

A special code was developed to identify the 62 occupations or occupational fields for which the programs trained. A code derived from the "Dictionary of Occupational Titles"* did not seem to be usable. Neither the two- nor the three- digit occupational code differentiated the occupations sufficiently. For this reason, a two-digit serial number was used to identify each of the occupations for which the programs offered training. A third digit was added to the two-digit number to reflect the status or earning potential of the occupations. This number was assigned after review of limited wage survey data on the basis of the judgment of the Investigator and his staff. Such a variable cannot be highly accurate since the relative wage levels of the occupations vary in different parts of the country. Even more important, the post-training entry occupations were not defined well enough for any realistic wage survey.

STATISTICAL EVIDENCE

The statistical evidences produced for the study are of two kinds:

1. Correlations of each of the 93 independent variables from the questionnaire and from the OMAT files with each criterion: (Retention and Placement)

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* Dictionary of Occupational Titles, 1965. Volume II, Occupational Classification and Industry Index, Third Edition, U.S. Department of Labor, 1965

2. Combination of independent or predictor variables for the best possible prediction of each criterion.

Table 1 shows the correlation of each of the variables obtained from the MDTA director questionnaire. To help in reading the table, each coefficient which differs significantly from zero* is identified. For these variables, 21 have been starred for their significant correlations with per cent Retention, and 12 for their significant correlation with per cent Placement. It may be noted that the average per cent Retention of the 222 sections of MDTA programs encompassed by this study is 83.5, and for those completing the course, the average per cent Placement is 76.2. For the entire 312 sections, the average values were 83.2 and 75.1 respectively. A summary of the statistically significant correlations found in Table 1 follows.

Two of the answers to Question 1, "How Were Trainees Selected?" showed correlations high enough to note. Selection on the basis of "No Employment" and on the basis of "No Employment During the Previous Three Months" showed a negative correlation with Retention. In other words, training programs which selected trainees on these two factors showed lower Retention than those using other factors. The method of selection showed no relationship to per cent Placement. Not using aptitude or ability tests (2) is negatively correlated with Placement. In other words, those programs which did use such tests have a higher average per cent Placement.

Checking any of the answers to Question 3, showed a negative correlation with both Retention and Placement (each of the answers provided indicated some unsatisfactory condition in the training situation). If the director added his own answer showing that these conditions were not present, the correlations were still negative; but where no answers were checked, the correlations with each of the criteria were larger and positive. This may be the result of an artifical division of those programs for which there were no negative factors available to be checked.

* One star indicates that the coefficient differs from zero at the 5% level of confidence; two stars indicate significance at the 1% level.

An interesting finding was that having the training course organized or constructed by the instructor appears to be unfavorable to Retention (Question 4).

An analysis of responses by program directors showed that large classes (trainee:instructor ratio) resulted in a poorer Retention rate than smaller classes. (This is also supported by the negative correlation found in Table 2 between class size and Retention rate.)

As one would well expect, higher rates of absenteeism are (6) associated with poorer Retention. Absenteeism, however, is not associated with class size or the trainee:instructor ratio.

The answers regarding discipline (Question 8) are of interest. "Not a major problem," or "Rarely came to the Director's attention" are characteristic of programs of higher Retention, while "Required careful watching" is more common among the lower Retention programs. Only "Was a serious problem" is related to Placement (negatively).

If the course's time demands were reasonable (11.9), the per cent Placement was, on the average, slightly higher.

A report that the neighbors did not object to the presence of the MDTA programs (12.6) is more common among the high Retention and high Placement programs than those with lower Retention and lower Placement. The occurence of a negative relationship for "Welcomed" (12.7) may be due to lack of other favorable alternative answers. (There is a correlation of -.36 between the two categories, 12.6 and 12.7)

Question 13 shows that level of I.Q. is negatively related to Retention, and also that having no estimate of I.Q. is more characteristic of low Retention programs.

A report of inadequate allowance for trainee transportation is typical of lower Retention programs, while "No Answer" to the question (implying adequacy of allowances) is more common among the higher Retention programs.

The only answer regarding instructor qualification (Question 15) having any statistical significance is "Instructor Had Work but Not Teaching Experience." To a slight extent, this is more common for the higher Placement programs. Connected with this - and practically as significant - programs requiring a teacher's certificate or license are more commonly found among the lower Placement programs. Neither of the responses were correlated to Retention.

Whether or not the I.Q. was known to the program director appears to be of some significance.

In the area of counseling (Question 19) instructor counseling outside of class and no counseling program were more frequently reported for the lower Retention programs. Counseling by the instructor as part of the classroom operation was more frequently found in the higher Retention programs.

Reported use of either standard tests, or instructor judgments as a measure of learning (Question 20) was more common among the lower Retention programs. Since no other responses reflecting how learning was measured showed any significant correlation, it may be assumed that the appraisal methods were too varied (or too irregularly applied) to have significant bearing on either Retention or Placement.

More of the directors of higher Placement programs noted that they used only an "overall record" of learning. They also indicated that they made more frequent use of local contact with employers as a placement procedure.

Fewer of the director questionnaire answers showed significant correlation with the per cent Placement than with Retention. Of the 12 answers to the questionnaire showing significant correlation with Placement, four also showed significant correlation with Retention. These four are:

3 (others) - written in by MDTA respondees indicating satisfactory classroom conditions

3 (no answer) - to question offering only negative answers about classroom conditions

12.6 - no objections were raised by neighbors

19.4 - counseling by the instructor as part of the instructional process

For all four of these responses the direction of discrimination was the same for both Retention and Placement.

The correlation of Retention and Placement with the OMAT data for the same 222 sections of the MDTA programs and for 312 sections (including the 222) are shown in Table 2. In addition, the table shows the mean or average of the per cents for each predictor. For example, the average of the per cent Female for all 222 sections is 43.9, and the mean for all 222 sections for the % Head of Household is 58.5, etc.

The discussion of the correlations of the predictor variables with Retention and Placement is based on the evidence from the same 222 sections of MDTA programs referred to in Table 1.

Of the 18 variables, three showed significant correlations with Retention and six had significant correlations with Placement.

Those sections having higher proportions of female trainees are more likely to be among the lower Placement programs.

The sections having more "heads of household" are more common among the higher Placement programs.

Having 12 or more grades of education is more characteristic of both the higher Retention and higher Placement programs.

Per cent receiving public assistance is usually greater in both the lower Retention and the lower Placement programs.

Having been unemployed 52 or more weeks prior to entering the programs is more common in the lower Placement programs.

Having a larger proportion of white trainees is characteristic of the better Placement programs. It may also be noted that there is a correlation of 0.28 between white trainees and length of programs.

Larger classes are not conducive to higher Retention.

The correlations shown by the larger sample of 312 sections of MDTA programs are of about the same magnitude and may be interpreted the same as for the 222 section sample.

PREDICTION

Whenever it is possible to predict an outcome, the door to better control of that outcome is opened. If it is possible to predict - to anticipate - outcomes of MDTA programs, it may be possible to use the predictive evidences as a way of changing the outcomes in a more desirable direction. This can operate only if the values or operation of the predictors can be changed at will, and of such predictors do in fact influence outcomes, rather than being merely concommitant to outcomes.

If we were to make a purely statistical prediction of the Retention and of the Placement rates for the MDTA programs, it would be inefficient to use all of the 93 independent variables for this purpose. It is possible to select a much smaller number of variables which will show as high a correlation, after correction for chance factors, with a criterion as one could obtain by using all of them.

The statistical method used* operates as follows: first select that one variable showing the highest correlation with the criterion or outcome. The second variable to be selected is that one which, in combination with the one already selected, produces the highest correlation with the outcome. The third variable selected is the one which, combined with the two already selected, produces the highest correlation with the outcome or criterion. The selection of more variables follows the same pattern, until the addition of any other variable will introduce more chance error than new information. The order of selection is essentially the same as the order of importance of the variable in its relationship with the criterion.

Table 3 shows the variables in the order of their selection for prediction of per cent Retention, and Table 4 shows the variables in the order of their selection for prediction of per cent Placement.

For the prediction of Retention (Table 3); absenteeism is the best predictor. It correlates -0.354 with per cent retention, and in the final set of predictors its weight (W)** is -6.77. The second variable was "duration" or length of program. By itself, it correlates -0.315 with Retention; in the final set of predictors its weight (W) is -.43, and, with the previously selected predictor, correlates 0.437 (R) with per cent Retention.

A total of 14 variables were selected, producing a correlation R of 0.719. Eleven of the 14 variables referred to characteristics of the programs rather than to characteristics related to selection of trainees. Hence it is proper to believe that a good estimate of the probable Retention rate of an MDTA course can be made on the basis of the characteristics of the course organization or course management.

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* Stepwise regression (SHARE 3143)

** The weights (W) are statistically determined values, useful in combining the several evidences into a single estimate of expected Retention or expected Placement. Their magnitude is not related to importance.

The variables which best predict per cent Placement are shown in Table 4 in the order of selection. Six variables produced a multiple correlation (R) of 0.511 with per cent Placement. The last 3 of these selected desirable characteristics of the trainee group and could be classed as possible selector variables.

If, however, other variables describing program organization and program management factors, and having significant correlations with Placement had been selected by the statistical program, the final multiple correlation (R) would have been almost as large as that noted in Table 4.

These evidences show that the per cent Placement for MDTA programs can be predicted on the basis of the organization and management of the programs about as well as college marks are predicted by aptitude tests.

One can speculate on the reasons why Retention is more predictable than Placement. The latter does involve more factors outside of the training program itself and may exhibit lower correlations with program characteristics because of it. It is of interest to note that both in the correlations (Tables 1 and 2) and in the selected predictors most of the variables are related in a similar way to both of the criteria.

SUMMARY AND RECOMMENDATIONS

As one way of summarizing the results of the statistical analysis, one may divide the predictors into two groups: those which relate to characteristics of the trainees, and those which describe the program or its management. If the variables which relate to characteristics of trainees and also show significant correlation with either Retention or Placement were used to select trainees, the people selected would not fit the description of the people for whom the MDTA program was designed. According to the statistical evidence, if trainees are selected to show a high Retention rate, those selected would have education at the 12th

grade level or higher, not be receiving public assistance, have marketable skills and have had employment within the three months preceding the training program. These are not the people for whom the MDTA programs were designed. The same statement can be made relative to selection of trainees for maximum per cent Placement. The real problem is that of making the programs fit the trainees rather than trying to select trainees to fit the training programs.

Both Retention and Placement show significant correlation with characteristics of the program organization and program management, enough so that efforts to improve the standing of an MDTA program either as to its Retention or its Placement should be fruitful.

In reviewing the program variables associated with either Retention or Placement, the present data do not demonstrate that these are causes, but they are consistent with the judgments and experiences of many educators. To improve Retention, the "significant variables" indicate that the following actions might well be taken:

- reduce absenteeism
- reduce class size and reduce the trainee:teacher ratio
- promote a sensible counseling program for the trainees, especially taking advantage of the instructor in his classroom relationship to the trainees
- take steps to insure that the neighbors of the training program do not object to its presence
- as far as possible handle disciplinary problems by prevention
- develop valid and acceptable ways of measuring progress in learning
- see that training is adjusted to the level and energies of the trainees
- have course content and organization preplanned so that the instructor does not have to organize the course
- be sure that financial allowances for trainees are adequate
- have knowledge of the over all abilities of the trainees

And on the same basis Placement might be enhanced by the following steps:

- make use of aptitude tests to aid in assignment and as an aid in performance evaluation
- see that difficulty level and amount of work undertaken are appropriate to the trainees, and that the time demands of the course are reasonable
- take steps to prevent serious disciplinary problems from arising
- adequate supply and good equipment maintenance is related to placement
- insure that the neighbors accept the presence of the program
- have available an estimate of the trainees' quality of work in the course
- develop contacts with local industries to aid in placement
- encourage counseling by the instructor as part of instructional duties
- have a program of evaluation of instructor performance
- select instructors who have had experience as workers in their field of instruction

The next step is to study more intensely and in greater detail, the effects of program organization, and administrative and instructional practices on both Retention and Placement. The present study shows, in gross, that such factors are pertinent. We are now ready to ask about the effects of such practices on differing kinds of trainees and on varying programs.

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TABLE 1

Correlations of Questionnaire Responses
With Retention and Placement
(N = 222 Sections of MDTA Programs)

Variables: Directors' Questionnaire	Correlations With % Retention	% Placement
1. How were the trainees selected for this course?		
1.1 All selection was done by the State Employment Service	-.02	-.06
1.2 Had no marketable skill	-.13*	-.07
1.3 Had no employment except casual labor	-.10	.03
1.4 Victims of automation	.01	.01
1.5 Physically handicapped	-.04	-.07
1.6 Needed upgrading to meet employer needs	.00	.07
1.7 Had no employment for preceeding 3 months	-.18**	-.08
1.8 High school graduate	.03	.06
2. Aptitude and ability tests were		
2.1 used to improve the selection of trainees	-.09	.08
2.2 used to aid in placement in the proper classes	-.11	.08
2.3 used to help in counseling of trainees	-.12	-.04
2.4 used as a part of the program evaluation procedure	.03	.08
2.5 not used	-.05	-.27**
3, (Pertains to the course as it relates to trainees)		
3 Answers (Replies to questions 1-5)	-.12	-.13*
3 Others (Written in by MDTA respondees)	-.16*	-.18**
3 NA, (No answers)	.22**	.23**
4. The course organization and content		
4.1 were the instructor's responsibility	-.17**	.01
4.2 were carefully planned before the course started	.01	.09
4.3 followed one given in high schools in the area	-.09	.10
5. (Pertains to instructor to trainee ratio)	-.21**	-.09
6. (Pertains to attendance for entire course)	-.35**	.09
7. (Pertains to subsistence allowance for trainees)	-.07	-.01
8. Discipline among trainees		
8.1 was a serious problem	-.08	-.17*
8.2 required careful watching, but little action	-.18**	.03
8.3 was not a major problem	.23**	.10
8.4 rarely came to the director's attention	.16*	.00
9. (Pertains to condition of training room)		
9.9 Adequate	.02	.06
9 Other (Replies written in by MDTA respondees)	.01	.01
10. (Pertains to convenience of transportation; i.e., time needed)	-.09	.03

* Significant at the 5% Level ** Significant at the 1% Level

TABLE 1

Correlations of Questionnaire Responses
With Retention and Placement
(N = 222 Sections of MDTA Programs)

Variables: Directors' Questionnaire		Correlations With % Retention	Correlations With % Placement
11.	(Pertains to time demands of the course)		
11.9	The time demands were reasonable	-.06	.18**
11	Other (Responses written in by MDTA respondees)	-.06	-.04
12.	What kind of objections were made by the neighbors about having a training program in the neighborhood?		
12.6	No objections were raised.	.23**	.18**
12.7	The program was welcomed.	-.17**	-.01
12	Other (Responses written in by MDTA respondees)	-.02	.00
13.	What was the condition of the equipment available for the training?		
13.5	Adequate supply and maintenance of equipment	.06	.09
13	Other (Response written in by MDTA respondees)	.08	.01
13	NA (No Answer)	-.06	-.17**
14.	Were the financial allowance given to the trainees		
14.1	inadequate for transportation	-.22**	-.12
14.2	inadequate for subsistence	-.08	-.05
14	NA	.18**	.08
15.	What were the qualifications of the instructor for teaching this course?		
15.1	Experience as a worker but not as a teacher	.00	.13*
15.2	Experience as a teacher but not as a worker	-.10	-.06
15.3	Experience both as a teacher and a worker	-.10	.03
15.4	Had to have a teacher's certificate or license	.00	-.12
15.5	No previous experience either as a teacher or as a worker	.00	.00
16.	How was the teaching performance of the instructor judged?		
16.1	By direct observation by program director	.03	.10
16.2	By reports from trainees in the class	.01	-.12
16.3	By amount learned by trainees	-.06	.05
16.4	By the instructor's reports on the performance of his class	.02	-.04
16.5	By other methods	-.08	-.15*
16.6	No assessment of the instructor's performance was made.	00	00
17.	What was the average reading skill level of the trainees?	-.12	.10

TABLE 1

Correlations of Questionnaire Responses

With Retention and Placement

(N = 222 Sections of MDTA Programs)

Variables: Directors' Questionnaire		Correlations With % Retention	Correlations With % Placement
18.	What was the average IQ score of trainees before taking the course?		
18.1-4	Approximate Level of I.Q.	-.13*	.11
18.5	No I.Q. scores available	-.14*	.07
19.	What counseling services were available to trainees during the training program?		
19.1	Professional counseling by a person other than the instructor	-.08	.06
19.2	Counseling by the instructor himself outside class	-.16*	.01
19.3	Counseling by someone representing the field for which the training was being given	-.05	.09
19.4	Counseling by the instructor as part of the instructional process	.19**	.15*
19.5	No counseling was available to the trainees.	-.23**	.04
20.	How was progress in learning measured?		
20.1	By standardized tests (intelligence, aptitude or achievement)	-.13*	.01
20.2	By tests constructed by the instructor	.12	.08
20.3	By the instructor's best judgment	-.21**	.08
20.4	Other measurements	.03	.08
20.5	No measurement of learning was made	.00	-.05
21.	Records of progress in learning were		
21.1	records of tests and performance tests over the entire course	.02	.00
21.2	only on overall quality of work in course	-.09	.16*
22.	What methods were used to find jobs for trainees completing the course?		
22.1	Placement was the responsibility of the local Employment Service	-.04	.09
22.2	Contacting of local industries to locate vacancies	-.06	.13*
22.3	Encouraged trainees to answer newspaper ads	-.09	.12
22.4	Commercial placement officers enrolled the trainees	.06	-.11
22.5	Publicity about trainee capabilities	-.09	-.01
22.6	Trainees sought jobs for themselves	-.12	.08
22	No answers	-.11	.11

TABLE 2

Correlations of Data of Record (OMAT)

With Retention and Placement

Variables: OMAT follow-up data	N= 312 Sections of MDTA Programs Correlations With % Retention	% Placement	N= 222 Sections of MDTA Programs Correlations With % Retention	% Placement	Mean Value
% Female	.05	-.13*	.01	-.19**	43.9
% Head of Household	-.05	.11*	.00	.14*	58.5
% Education 12th Grade or more	.11*	.18**	.14*	.19**	61.1
% Education 8th Grade or less	-.06	-.12*	.06	-.10	6.7
% Gainful Employment 3 years or less	.08	.00	.04	.02	21.4
% Gainful Employment 10 years or more	.06	.05	.10	.07	30.4
% Having No Dependents	.08	-.05	.02	-.06	38.5
% Primary Wage Earner	-.04	.06	.01	.11	69.7
% Eligible for Allowance	.01	-.07	.01	-.08	95.2
% Unemployment Claimant	-.03	.07	.03	.10	25.6
% Receiving Public Assistance	-.14*	-.18**	-.15*	-.19**	9.6
% Prior Employment 14 weeks or less	-.03	-.02	-.04	-.02	41.1
% Prior Employment 52 weeks or more	-.02	-.12*	-.03	-.15*	16.2
% Male Veteran	-.05	.04	-.01	.08	18.3
% Handicapped	-.06	-.08	-.03	-.05	3.6
% White	.09	.11*	.02	.16*	69.9
% 21 or younger	.03	.07	.00	.07	20.5
Number in Section	-.28**	-.06	-.28**	-.11	25
Length of Training	--	--	-.32**	.15*	19.9 weeks
Occupational Rating	--	--	-.15*	.22**	2.5

* Significant at the 5% Level ** Significant at the 1% Level

TABLE 3

Data Offering Maximum Prediction of PerCent
of Retention of Trainees
(N = 222 Sections of MDTA Programs)

	Predictor Variables	r	W	R
6.	Absenteeism	-.354	- 6.77	.354
	Duration of Programs	-.315	- .43	.437
12.6	Neighbors Had No Objections to Programs	.226	12.29	.507
19.5	No Counseling Program	-.227	-27.41	.541
	Number of Trainees per Section	-.278	- 2.74	.575
19.4	Counseling done by Instructor in Class	.187	14.06	.595
10.	Convenience of Transportation	-.089	4.92	.620
18.5	Had No Estimate of Average IQ of Class	-.137	- 5.31	.637
%	Had Education of 12th Grade or Higher	.139	2.90	.656
5.	Trainee:Instructor Ratio	-.210	- 6.17	.674
15.3	Instructors Had Experience Both As Teacher and Worker	-.095	- 8.96	.684
%	Had Been Gainfully Employed 10 or more Years	.104	3.20	.698
%	21 Years of Age or Younger	-.003	2.24	.710
16.3	Used Amount Learned to Evaluate Instruction	-.063	- 6.45	.719

TABLE 4

Data Offering Maximum Prediction of PerCent
of Placement of Trainees
(N = 222 Sections of MDTA Programs)

	Predictor Variables	r	W	R
2.5	Aptitude Tests Not Used	-.271	-17.95	.271
3 NA	(No Answers Regarding Course as it relates to trainees)	.234	10.62	.352
6	Absenteeism	-.093	4.53	.395
	% Education 12th Grade or Higher	.195	2.87	.438
	% Female	-.195	- 1.20	.495
	% White	.157	1.18	.511

APPENDIX 1

APPENDIX 1

PERFORMANCE RESEARCH INC.
1346 CONNECTICUT AVE. N. W.
WASHINGTON D. C. 20036

Program No: _____

Training Area: _____

MDTA PROGRAM CHECKLIST

DIRECTIONS: Below are questions about the above named MDTA program. Please answer all questions with reference only to that program. Mark each answer that applies. For some questions you may need to mark several answers, and for others, only one answer will be required.

---

1. How were the trainees selected for this course?
   - __ 1.1 All selection was done by the State Employment Service
   - __ 1.2 Had no marketable skill
   - __ 1.3 Had no employment except casual labor
   - __ 1.4 Victims of automation
   - __ 1.5 Physically handicapped
   - __ 1.6 Needed upgrading to meet employer needs
   - __ 1.7 Had no employment for preceeding 3 months
   - __ 1.8 High school graduate

2. Aptitude and ability tests were
   - __ 2.1 used to improve the selection of trainees
   - __ 2.2 used to aid in placement in the proper classes
   - __ 2.3 used to help in counseling of trainees
   - __ 2.4 used as a part of the program evaluation procedure
   - __ 2.5 not used

3. Considering the trainees in the course
   - __ 3.1 the course was too hard
   - __ 3.2 the course was too much reading and too little doing
   - __ 3.3 the course was almost a "book" course
   - __ 3.4 the course did not have enough emphasis in work habits, attitudes and employer requirements
   - __ 3.5 the course started at too advanced a level for the trainees

4. The course organization and content
   - __ 4.1 were the instructor's responsibility
   - __ 4.2 were carefully planned before the course started
   - __ 4.3 followed one given in high schools in the area
   - __ 4.4 were reviewed by the prospective employers of the trainees

5. The instructor to trainee ratio was
   - __ 5.1 less than 5 trainees to 1 instructor
   - __ 5.2 5 to 15 trainees to 1 instructor
   - __ 5.3 16 to 25 trainees to 1 instructor
   - __ 5.4 26 to 50 trainees to 1 instructor
   - __ 5.5 more than 50 trainees to 1 instructor
   - __ 5.6 No information available

6. What was the average attendance record of the trainees for the entire course? Most trainees were present
   - __ 6.1 almost 100% of the time
   - __ 6.2 75 to 90% of the time
   - __ 6.3 60 to 75% of the time
   - __ 6.4 less than 60% of the time

7. What per cent of trainees received subsistence allowances?
   - __ 7.1 100%
   - __ 7.2 90 to 99%
   - __ 7.3 75 to 89%
   - __ 7.4 50 to 74%
   - __ 7.5 49 or less %

8. Discipline among trainees
   - __ 8.1 was a serious problem
   - __ 8.2 required careful watching, but little action
   - __ 8.3 was not a major problem
   - __ 8.4 rarely came to the director's attention

9. What was the condition of the room in which the training too place?
   - __ 9.1 Too small
   - __ 9.2 Too large
   - __ 9.3 Too hot
   - __ 9.4 Too cold
   - __ 9.5 Not air-conditioned
   - __ 9.6 Badly lighted
   - __ 9.7 Poor accoustics
   - __ 9.8 Uncomfortable seating
   - __ 9.9 Adequate

10. How convenient was transportation for most trainees from home to the training location?
    - __ 10.1 Within walking distance
    - __ 10.2 Less than a 15 minute ride
    - __ 10.3 A ride of 15 to 30 minutes
    - __ 10.4 A ride of 30 to 60 minutes
    - __ 10.5 More than an hour's ride

11. How appropriate were the time demands of the course?

- __ 11.1 The entire course was too long.
- __ 11.2 The entire course was too short.
- __ 11.3 Too early in the day
- __ 11.4 Too late in the day
- __ 11.5 Too many sessions per week
- __ 11.6 Too few sessions per week
- __ 11.7 Class periods were too long.
- __ 11.8 Class periods were too short.
- __ 11.9 The time demands were reasonable.

12. What kind of objections were made by the neighbors about having a training program in the neighborhood?

- __ 12.1 The trainees were too noisy.
- __ 12.2 The equipment was too noisy..
- __ 12.3 Too much traffic
- __ 12.4 The training brought undesirable people into the neighborhood.
- __ 12.5 Crime would increase in the neighborhood.
- __ 12.6 No objections were raised.
- __ 12.7 The program was welcomed.

13. What was the condition of the equipment available for the training?

- __ 13.1 Not enough equipment for the number of trainees
- __ 13.2 More equipment than needed for the number of trainees
- __ 13.3 Inadequate maintenance of the equipment used
- __ 13.4 Obsolete
- __ 13.5 Adequate supply and maintenance of equipment

14. Were the financial allowances given to the trainees

- __ 14.1 Inadequate for transportation
- __ 14.2 Inadequate for subsistence
- __ 14.3 Inadequate for training supplies (books, etc.)
- __ 14.4 Inadequate for all of the above

15. What were the qualifications of the instructor for teaching this course?

- __ 15.1 Experience as a worker but not as a teacher
- __ 15.2 Experience as a teacher but not as a worker
- __ 15.3 Experience both as a teacher and a worker
- __ 15.4 Had to have a teacher's certificate or license
- __ 15.5 No previous experience either as a teacher or as a worker

16. How was the teaching performance of the instructor judged?

- __ 16.1 By direct observation by the program director
- __ 16.2 By reports from trainees in the class
- __ 16.3 By the amount learned by trainees
- __ 16.4 By the instructor's reports on the performance of his class
- __ 16.5 By other methods
- __ 16.6 No assessment of the instructor's performance was made.

17. What was the average reading skill level of the trainees

- __ 17.1 Third grade or less
- __ 17.2 4th to 6th grade
- __ 17.3 6th to 8th grade
- __ 17.4 8th grade or higher
- __ 17.5 No information

18. What was the average I.Q. score of trainees before taking the course?

- __ 18.1 Below 75
- __ 18.2 75 to 89
- __ 18.3 80 to 109
- __ 18.4 110 or above
- __ 18.5 No I.Q. scores available.

19. What counseling services were available to trainees during the training program?

- __ 19.1 Professional counseling by a person other than the instructor
- __ 19.2 Counseling by the instructor himself outside the class
- __ 19.3 Counseling by someone representing the field for which the training was being given
- __ 19.4 Counseling by the instructor as part of the instructional process
- __ 19.5 No counseling was available to the trainees.

20. How was progress in learning measured?

- __ 20.1 By standardized tests (intelligence, aptitude or achievement)
- __ 20.2 By tests constructed by the instructor
- __ 20.3 By the instructor's best judgment
- __ 20.4 Other measurements
- __ 20.5 No measurement of learning was made.

21. Records of progress in learning were

- __ 21.1 records of tests and performance tests over the entire course
- __ 21.2 only on overall quality of work in course
- __ 21.3 only on completion of course or failure to complete
- __ 21.4 not kept

22. What methods were used to find jobs for trainees completing the course?

- __ 22.1 Placement was the responsibility of the local Employment Service
- __ 22.2 Contacting of local industries to locate vacancies
- __ 22.3 Encouraged trainees to answer newspaper ads
- __ 22.4 Commercial placement officers enrolled the trainees
- __ 22.5 Publicity about trainee capabilities
- __ 22.6 Trainees sought jobs for themselves

APPENDIX 2

APPENDIX 2

CODING INSTRUCTIONS

Data for coding this study has been derived from three sources.

1. PRI basic data sheets provide the identity of the included programs and the criterion sorces.

2. The OMAT computer tapes. All items except one are derived from Table 40B. Only item "% Female" is found in Table C.

3. The PRI Program Director Questionnaires.

All coding has been recorded on the code sheets provided. Operations will be:

First: Put in data from PRI sheets

Second: Put in OMAT data

Third: Put in PRI Program Director Questionnaire data

I. Coding PRI Sheets.

a. State:
1. California
2. Illinois
3. Indiana
4. Massachusetts
5. Michigan
6. New Jersey
7. New York

b. Program Number -- drop the 4 (thousands digit) and record the remaining three digits.

c. Make out a code sheet for each section giving each its appropriate number.

d. % Retention --- record the per cent to nearest whole number: e.g. 86.7 is 87% and will be coded 087.

e. % Placement --- code same as (d) above.

f. Weeks Duration --- record as 2-digits (e.g.: 6 weeks is 06).

g. Trainees/Section is the total number for which training is provided, divided by the number of sections.

h. Occupation --- use the code provided.

II. Coding OMAT data:

All OMAT data except the number in section is recorded as a per cent. Obtain number in section from Table 40C, and all other data from Table 40B. Code these per cents as follows:

Per Cent	Code
0	0
1- 9	1
10-19	2
20-29	3
30-49	4
50-69	5
70-79	6
80-89	7
90-99	8
100	9
N D	X

Number of trainees in section: write as a 2-digit number; of 99 or more, enter 99 (see Table 40C).

III. Coding PRI Program Director Questionnaire data:

The coding scheme is apparent from the coding sheet. Most of the answers are coded on a 0,1 (non-check, checked) basis:

1.1 - 1.8 : record 1 for each answer checked; 0 if not checked.

2.1 - 2.5 : record 1 for each answer checked; 0 if not checked.

Question 3

3 ans : record 1 if any answer is checked; 0 if none.

3 oth : record 1 if an additional answer is supplied and checked; 0 if not.

3 NA : record 1 if no answer at all is checked; 0 if any answer is checked.

5, 6, 7, 10 for each of these questions, record the number of the the answer checked.

e.g.: 5.2 is coded as 2; if no answer is checked, code X.

9.9 : record 1 if checked; 0 if not.

9 oth : record 1 if any answer from 9.1 - 9-8 is checked; 0 if not.

12.6 : record 1 if checked; 0 if not.

12.7 : same as 12.6

12 oth : record 1 if any answer from 12.1 - 12.5 is checked; 0 if not.

13.5 : record 1 if checked; 0 if not.

13 oth : record of any answer from 13.1 - 13.4 is checked; 0 if not.

13 NA : record 1 if No Answer in 13 is checked; 0 if otherwise.

14.1 : record 1 if checked; 0 if not.

14.2 : same as 14.1

14 NA : record 1 if No Answer to 14 is checked; 0 if otherwise.

15.1 - 15.5 : for each of these record 1 if checked; 0 if not.

16.1 - 16.6 : for each of these record 1 if checked; 0 if not.

17 : record the number of the answer checked.

e.g.: 17.2 is coded as 2; if no answer is checked, code X.

18.1 - 18.4 : record 1 if any of these are checked; 0 if not.

18.5 : record 1 if checked; 0 if not.

19.1 - 19.5 : same as for 16

20.1 - 20.5 : same as for 16

21.1 - 21.2 : same as for 16

22.1 - 22.6 : same as for 16

No 22 : record the number of answers 22.1 - 22.6 which were checked.